

set forth on a separate page. Applicants respectfully request withdrawal of the instant objection.

Claims 1 and 27-62 are currently in the case.

#### Rejection Under 35 U.S.C. § 112

The Examiner has rejected claims 37, 42, 44, 46, 49, 53 and 58 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner has rejected claims 37, 42, 44, 46 and 49 for their use of improper Markush language. The Examiner's attention is directed to the above-listed amendments, in which the aforementioned claims have been amended to recite proper Markush language. Applicants respectfully request withdrawal of this rejection.

The Examiner has rejected claim 53 as indefinite for its improper dependency. The Examiner's attention is directed to the above-listed amendments, in which the aforementioned claim has been amended to properly depend from claim 51. Applicants respectfully request withdrawal of this rejection.

The Examiner has rejected claim 58 as indefinite for its purported inclusion of elements not actually disclosed. The Examiner's attention is directed to the above-listed amendments, in which the aforementioned claim has been amended to underscore its inclusion of ascertainable subject matter. Thus, Applicants respectfully request withdrawal of this rejection.

#### Rejection Under 35 U.S.C. §103

The Examiner has rejected claims 1, 27-29, 31-49, and 54-62 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,834,280 to Oxenboll et al. (hereinafter "Oxenboll"). Specifically, the Examiner contends that, although the claimed invention employs a different species of bacterial haloperoxidase to generate the oxidoreductase enzyme, it would have been obvious to a person of ordinary skill in the art to use any of the species taught by Oxenboll to arrive at the claimed invention, as recited in the aforementioned claims. Applicants respectfully traverse the rejection.

The present invention relates to cleaning compositions comprising an oxidoreductase with an  $\alpha/\beta$ -hydrolase fold and a catalytic triad consisting of the amino acid residues serine, histidine and aspartic acid. See PCT/US97/12445; Abstract of the Disclosure. Moreover, the oxidoreductase of the claimed invention is obtained from the

strain of *Serratia marcescens*. See PCT/US97/12445; page 7. Contrarily, Oxenboll relates to alkaline glucose oxidases comprising peptide sequences obtained from a strain of *Cladosporium*, particularly the strain of *Cladosporium oxysporum*. See U.S. Patent No. 5,834,280; Abstract of the Disclosure. Oxenboll further discloses that, "The polypeptides having glucose oxidase activity may be obtained from microorganisms which are synonyms of *Cladosporium*..." See U.S. Patent No. 5,834,280; Col. 10, lines 9-11.

Applicants submit that Oxenboll neither teaches nor suggests the oxidoreductase of the claimed invention, obtained from the strain of *Serratia marcescens*. Applicants wish to underscore the fact that the source of oxidoreductase of the present invention, does not fall within the explicit "synonyms of *Cladosporium*" limitation of Oxenboll. Nor does the oxidoreductase strain of the claimed invention exhibit the same characteristics of the Oxenboll strain. On the contrary, the preferred non-heme haloperoxidases of the claimed invention, including the *Serratia marcescens* strain, preferably exhibit an enzymatic activity of 10% to 40% at a pH of 7 to 12. See PCT/US97/12445; page 7.

The Examiner's attention is directed to the polypeptides of Oxenboll, which exhibit glucose oxidase activity of "...most preferably about 97%..." and "...preferably [have] an optimum in the [pH] range of about 6-7..." See U.S. Patent No. 5,834,280; Col. 11, lines 34-51. Furthermore, Oxenboll suggests nothing with regard to the employment of the amino acid triad of the claimed invention. Clearly, a person of ordinary skill in the art would not be motivated to incorporate a source of the oxidoreductase that is selected from an entirely different species and is characterized by entirely different properties than that of the express Oxenboll strain limitation. Accordingly, Applicants respectfully request withdrawal of the instant rejection and allowance of claims 1 and 27-62.

The Examiner has rejected Claims 1 and 30 under 35 U.S.C. § 103(a) as being unpatentable over Oxenboll in view of WO 96/06909 to Van Pee. Specifically, the Examiner contends that it would have been obvious to a person of ordinary skill in the art to incorporate the surfactant system in the compositions taught by Oxenboll into the compositions taught by Van Pee. Applicants respectfully traverse the rejection.

Van Pee relates to enzymatic, active oxygen-releasing mixtures that might be used as oxidizing agents for preparing chemical compounds and in bleaching, cleaning and disinfecting agents. See WO 96/06909; Abstract of the Disclosure. Van Pee discloses that said mixtures contain oxidoreductase with an  $\alpha/\beta$ -hydrolase fold and a catalytic triad consisting of the serine, histidine and aspartic acid amino acids; a hydrogen peroxide source and an aqueous solution of an organic acid or its salt. See WO 96/06909; Abstract of the Disclosure. Most importantly, the subject compositions of Van Pee are designed for use at a pH range of from 3.5 to 6.0, which is clearly outside the optimal pH range of

the claimed enzymes. See WO 96/06909; Abstract of the Disclosure. Furthermore, it is undisputed that Van Pee fails to teach detergent compositions comprising the aforementioned constituents, a surfactant and an enzymatic bleach system. See Paper No. 7; page 5. The disclosure of Oxenboll is summarized above. To reiterate, Oxenboll neither teaches nor suggests an oxidoreductase selected from the *Serratia marcescens* strain. Rather, Oxenboll explicitly limits selection of the source of the oxidoreductase to “synonyms of [the] Cladosporium” strain.

Applicants submit that, although Oxenboll discloses a surfactant, there exists no motivation or suggestion for a person of ordinary skill in the art to combine the reference of Oxenboll with Van Pee. Further, Applicants submit that even such a combination, although improper, would fail to yield a cleaning composition comprising each and every element of the claimed invention. The applicants wish to underscore that the instant invention draws suitable oxidoreductase from the strain of *Serratia marcescens* to achieve specific enzymatic activity within a desired pH range. As the above discussion established, such activity cannot be attained via the employment of the Oxenboll strain, nor can it be obtained from the enzymes of Van Pee. Thus, the attempted combination yields a cleaning composition characterized by enzymatic activity that is undesired and entirely different from the claimed invention. Accordingly, it would not have been obvious for a person of ordinary skill in the art to combine two references that fail to yield the desired, end-result of the claimed invention. Applicants respectfully request withdrawal of the instant rejection and allowance of claims 1 and 27-62.

The Examiner has rejected claims 1, 27-55, 57 and 61 under 35 U.S.C. § 103(a) as being unpatentable over Van Pee in view of U.S. Patent No. 5,500,153 to Figueroa (hereinafter “Figueroa”). Specifically, the Examiner contends that it would have been obvious for a person of ordinary skill in the art to incorporate the bleaching agents in the compositions taught by Figueroa into the compositions taught by Van Pee. The Applicants respectfully traverse this rejection.

Figueroa relates to hand-washing laundry detergent compositions containing a surfactant system including an anionic and nonionic surfactant mixture of polyhydroxy fatty acid amide surfactant and an amine oxide surfactant. See 5,500,153; Abstract of the Disclosure. The Van Pee disclosure is summarized above. To reiterate, Van Pee fails to teach a cleaning composition comprising the enzymatic activity within the pH range of the claimed invention. Applicants submit that it would not have been obvious to a person of ordinary skill in the art to combine Figueroa with Van Pee, as such a combination would fail to yield a cleaning composition comprising each and every element of the claimed invention. Such a combination, although improper, would fail to yield a cleaning composition comprising a non-heme haloperoxidase, including the *Serratia marcescens*

strain, characterized by enzymatic activity of 10% to 40% at a pH of 7 to 12, as claimed in the present invention. Accordingly, Applicants respectfully request withdrawal of the instant rejection and allowance of claims 1 and 27-62.

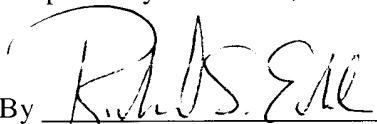
Before obviousness may be established, the Examiner must show that there is either a suggestion in the art to produce the claimed invention or a compelling motivation based on sound scientific principles. *Ex parte Kranz*, 19 U.S.P.Q.2d 1216, 1218 (B.P.A. I. 1990). The burden of establishing a prima facie case of obviousness falls upon the Examiner. Therefore, the evidence upon which the Examiner relies must clearly indicate that a worker of routine skill in the art would view the claimed invention as being obvious, as meant by 35 U.S. C. § 103. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979).

The mere fact that it is possible to find two isolated disclosures that might be combined in such a way to produce a new compound does not necessarily render such production obvious unless the art also contains something to suggest the desirability of the proposed combination. *In re Bergel and Stock*, 292 F.2d 955, 130 U.S.P.Q. 206 (C.C.P.A. 1961). When prior-art references require a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. In light of the fact that neither Oxenboll nor Van Pee nor Figueroa suggest the desirability of the non-heme haloperoxidases of the claimed invention, including the *Serratia marcescens* strain, the present invention is not rendered obvious over the cited art. Accordingly, withdrawal of the instant rejection and allowance of claims 1 and 27-62 are respectfully requested.

### **CONCLUSION**

Applicants have made an earnest effort to distinguish the claimed invention from the applied documents and to place claims 1 and 27-62 in condition for allowance. WHEREFORE, reconsideration of the rejections of the claims, in light of the Remarks provided, and allowance of Claims 1 and 27-62 are respectfully requested.

Respectfully submitted,

By \_\_\_\_\_

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## VERSION WITH MARKINGS INDICATING CHANGES MADE

30. A cleaning composition according to claim 1 wherein said oxidoreductase is a non-heme haloperoxidase obtained from the strain *Serratia marcescens* and characterized by enzymatic activity in a range of from about 10% to about 40%, in a pH range of from about 7 to about 12.

37. A cleaning composition according to claim 34 wherein said organic acid is selected from the group consisting of acetic acid, propionic acid, nonanoic acid, lauric acid, their corresponding sodium salts and mixtures thereof.

42. A cleaning composition according to claim 1 wherein said hydrogen peroxide source is selected from the group consisting of perborate, percarbonate and mixtures thereof.

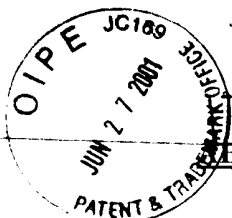
44. A cleaning composition according to claim 1 wherein said hydrogen peroxide source is selected from the group consisting of a glucose/glucose oxidase, a lactate/lactate oxidase system, and mixtures thereof.

46. A cleaning composition according to claim 47 wherein said detergent enzyme is selected from the group consisting of cellulase, lipase, protease, amylase and mixtures thereof.

49. A cleaning composition according to claim 48 wherein the bleaching agent is selected from the group consisting of perborate, percarbonate and mixtures thereof and the activator selected from the group consisting of tetraacetythylenediamine, nonanoyloxybenzenesulfonate, 3-5,-trimethyl-hexanotoxybenzenesulfonate, and mixtures thereof.

53. A cleaning composition according to claim 51 wherein said metallo catalyst is manganese.

58. A method of cleaning comprising the step of contacting a hard surface with a cleaning composition comprising a surfactant system, an oxidoreductase with an  $\alpha/\beta$ -hydrolase fold and a catalytic triad consisting of the amino acid residues serine, histidine and aspartic acid, a hydrogen peroxide source and an organic acid.



### ABSTRACT OF THE DISCLOSURE

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Cleaning compositions, including laundry, dishwashing, hard surface cleaner, oral/dental cleaning compositions, comprising an oxidoreductase with an  $\alpha/\beta$ -hydrolase fold and a catalytic triad consisting of the amino acid residues serine, histidine and aspartic acid, which provide effective and efficient cleaning of colored and/or everyday body stains and/or soils and the sanitization of treated surface.